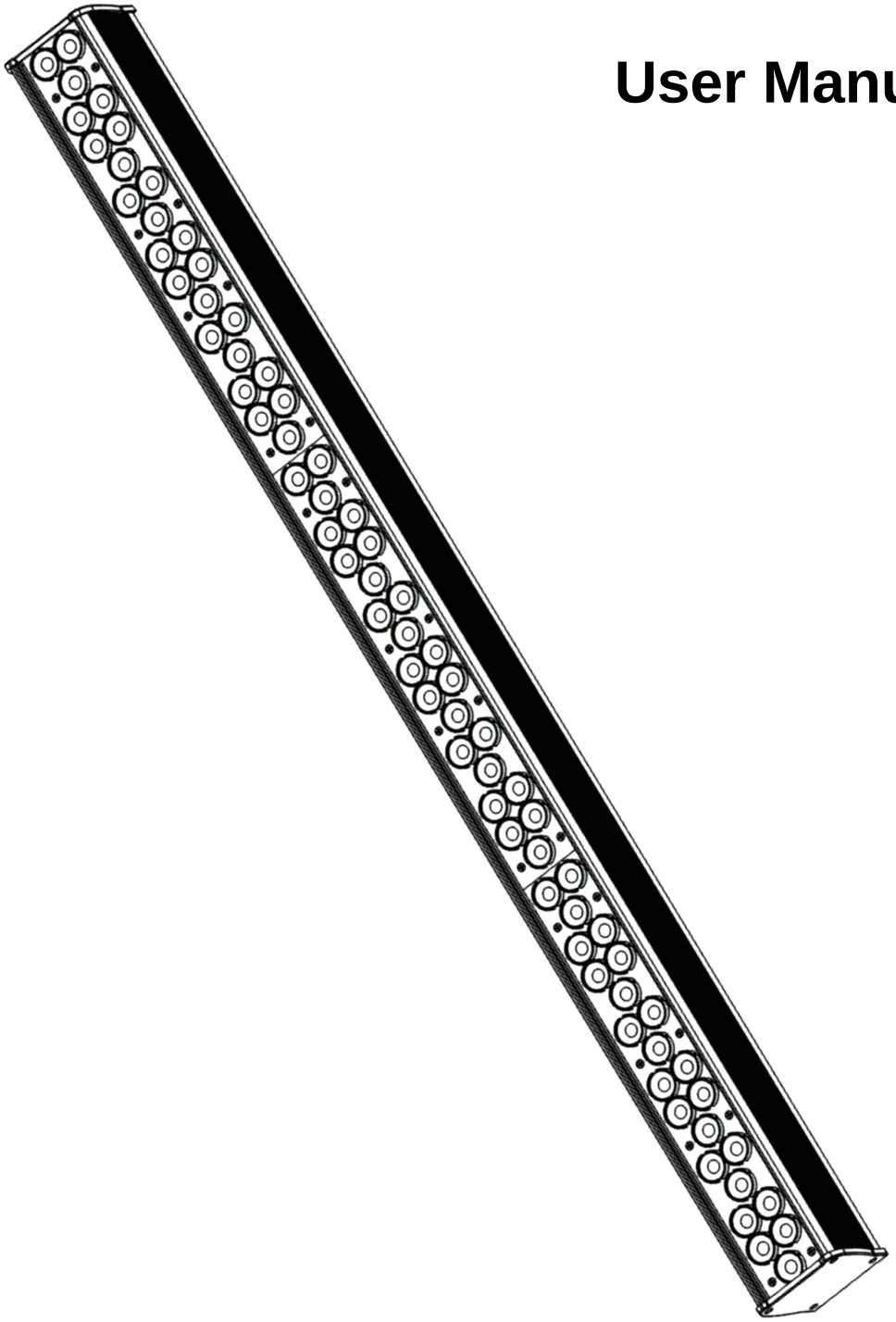
COLORADO™ BATTEN 72 TOUR



User Manual

CHAUVET®

Edition Notes

CHAUVET® released this edition of the COLORado™ Batten 72 Tour User Manual Rev. in December 2009. The COLORado™ Batten 72 Tour User Manual Rev. 01b covers the description, safety precautions, installation, programming, operation and maintenance of the COLORado™ Batten 72 Tour fixture.

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For better results, print this document in color, on letter size paper (8.5 x 11 inches), double sided. If using A4 paper (210 x 297 mm), configure your printer to scale the content of this document to A4 paper.

Intended Audience

Any person in charge of installing, operating and/or maintaining the COLORado™ Batten 72 Tour should read the Quick Start Guide that shipped with the COLORado™ Batten 72 Tour fixture and this manual in their entirety before installing, operating or maintaining the COLORado™ Batten 72 Tour.

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Document Revision

The COLORado™ Batten 72 Tour User Manual Rev. 01b supersedes all previous versions of this manual. Please discard any older versions of this manual you may have, whether in printed or electronic format, and replace them with this version.

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1. Before you Begin

What is included

- One COLORado™ Batten 72 Tour
- One power cord
- One safety cable
- Warranty Card
- User Manual

Unpacking Instructions

Immediately upon receiving a fixture, carefully unpack the carton. Check the box or flight case contents to ensure that all parts are present and that they are in good condition. If any part appears damaged from shipping, or if the carton show signs of mishandling, notify the shipper immediately. In addition, retain the box and all the packing material for inspection.

In any event, save the carton and all packing material because, in case that you have to return the fixture to the factory, you will have to do so in its original box or flight case, with its original packing. See the *Claims* section in the *Technical Information* chapter.

Text Conventions

Convention	Meaning
1~512	A range of values
50/60	A set of mutually exclusive values in the text
[10]	A DIP switch to be configured
Claims	A fixture function, a new term, a section or a chapter
"COLORado™ UM"	The name of another publication or manual
<SET>	A button to be pressed on the fixture's control panel
Settings	A menu option that can be selected but not modified
MENU > Settings	A sequence of menu options to be followed
[1~10]	A range of menu values of which one can be selected
Yes/No	A set of mutually exclusive menu options to choose
ON	A value to be entered or selected

Icons

Icons	Meaning
	This icon indicates critical installation, configuration or operation information. Failure to comply with this information may render the fixture partially or completely inoperative, damage third-party equipment, or cause harm to the user.
	This icon indicates important installation or configuration information. Failure to comply with this information may prevent the fixture from functioning correctly.
	This icon indicates useful, although non-critical information.

The term "DMX" used throughout this document refers to the USITT DMX512-A transmission protocol.

Safety Notes

Please read the following notes carefully because they include important safety information about the installation, usage and maintenance of this product.

It is important to read all these notes before starting to work with this product.

There are no user serviceable parts inside the COLORado™ Batten 72 Tour. Any reference to servicing this unit you may find from now on in this User Manual will only apply to properly CHAUVET® certified technicians. Do not open the housing or attempt any repairs unless you are one of them.

Please refer to all applicable local codes and regulations for proper installation of the COLORado™ Batten 72 Tour.

Keep this manual for future consultation. If you sell the COLORado™ Batten 72 Tour to another user, make sure that they also receive this manual.

Personal Safety

- Avoid direct eye exposure to the light source(s) while they are on.
- Always disconnect the COLORado™ Batten 72 Tour from its power source before servicing.
- Always connect the COLORado™ Batten 72 Tour to a grounded circuit to avoid the risk of electrocution.
- Do not touch the COLORado™ Batten 72 Tour's housing when operating.

Mounting and Rigging

- This product is for indoor use only! To prevent risk of fire or shock, do not expose this product to rain or moisture.
- Make sure there are no flammable materials close to the fixture(s) while operating.
- When hanging this fixture, always secure it to a fastening device using the included safety cable.

Power and Wiring

- Always make sure that you are connecting the COLORado™ Batten 72 Tour to the proper voltage, as per the specifications in this manual or on the product's sticker.
- Never connect the COLORado™ Batten 72 Tour to a dimmer pack.
- Make sure the controller's external voltage adapter housing or cable is not cracked, crimped or damaged.
- Never disconnect the fixture by pulling or tugging on the power cable.

Operation

- Maximum ambient temperature (Ta) is 104° F (40° C). Do not operate the fixture at a higher temperature.
- In case of a serious operating problem, stop using this product immediately!

In the unlikely event that your COLORado™ Batten 72 Tour may require service, please contact CHAUVET® Technical Support.

Expected LED Lifespan

LEDs gradually decline in brightness over time, mostly because of heat. Packaged in clusters, LEDs exhibit higher operating temperatures than in ideal or singular optimum conditions. For this reason, using all color LEDs at their fullest intensity significantly reduces the LEDs' lifespan. Under normal conditions, this lifespan can be of 40,000 to 50,000 hours. If extending this lifespan expectancy is vital, lower the operational temperature by improving ventilation and reducing the external temperature, as well as limiting the overall projection intensity

2. Introduction

Feature Description

The COLORado™ Batten 72 Tour is RGBW linear LED wash light fixture. It consists of a single module that accommodates the internal power supply, the main control, the control panel, the LED drivers, the LED boards and lenses as well as the power and signal connectors. It features two mounting brackets that double as floor mount feet and hanging support brackets. These brackets have tilt adjust knobs to simplify mounting this fixture.

Features

- 3, 4, 5, 6, 7, 9, 13, or 15-channel RGBWA LED linear wash light
- Operating modes
  - 3-channel: RGB control
  - 3-channel: HSV control (hue, saturation and value)
  - 4-channel: RGB, dimmer
  - 5-channel: RGBWA control
  - 6-channel: RGBWA, dimmer
  - 7-channel: RGBWA, dimmer, strobe
  - 9-channel: RGB for individual block control
  - 13-channel: RGBWA, ID addressing, dimmer, dimmer speed, strobe, macro, auto/custom, and module select
  - 15-channel: RGBWA for individual block control
- Built-in automated programs via DMX
- Recall custom programs via DMX
- RGBWA color mixing with or without DMX control

Additional Features

- Five distinct dimming curves
- Additional power output: max 13 units @ 120 V
- LED display with lock-out feature
- NEUTRIK® powerCON connectors
- 3-pin and 5-pin DMX input and output connectors
- Adjustable feet double as hanging bracket

Options

- Optical systems: 30° (installed), 25º x 6° (CL20x25x6) optional

DMX Channel Summary

TOUR	DMX Channel	Function
	1	Master Dimmer
	2	Red
	3	Green
	4	Blue
	5	White
	6	Amber
	7	Macro + White Balance
	8	Strobe
	9	Auto Programs + Fan
	10	Auto Speed
	11	Dimmer Speed
	12	ID Address
	13	Block Selection

BLOCK1	DMX Channel	Function
	1	Block 1 Red
	2	Block 1 Green
	3	Block 1 Blue
	4	Block 2 Red
	5	Block 2 Green
	6	Block 2 Blue
	7	Block 3 Red
	8	Block 3 Green
	9	Block 3 Blue

BLOCK2	DMX Channel	Function
	1	Block 1 Red
	2	Block 1 Green
	3	Block 1 Blue
	4	Block 1 White
	5	Block 1 Amber
	6	Block 2 Red
	7	Block 2 Green
	8	Block 2 Blue
	9	Block 2 White
	10	Block 2 Amber
	11	Block 3 Red
	12	Block 3 Green
	13	Block 3 Blue
	14	Block 3 White
	15	Block 3 Amber

ARC1	DMX Channel	Function
	1	Red
	2	Green
	3	Blue

ARC1 + D	DMX Channel	Function
	1	Master Dimmer
	2	Red
	3	Green
	4	Blue

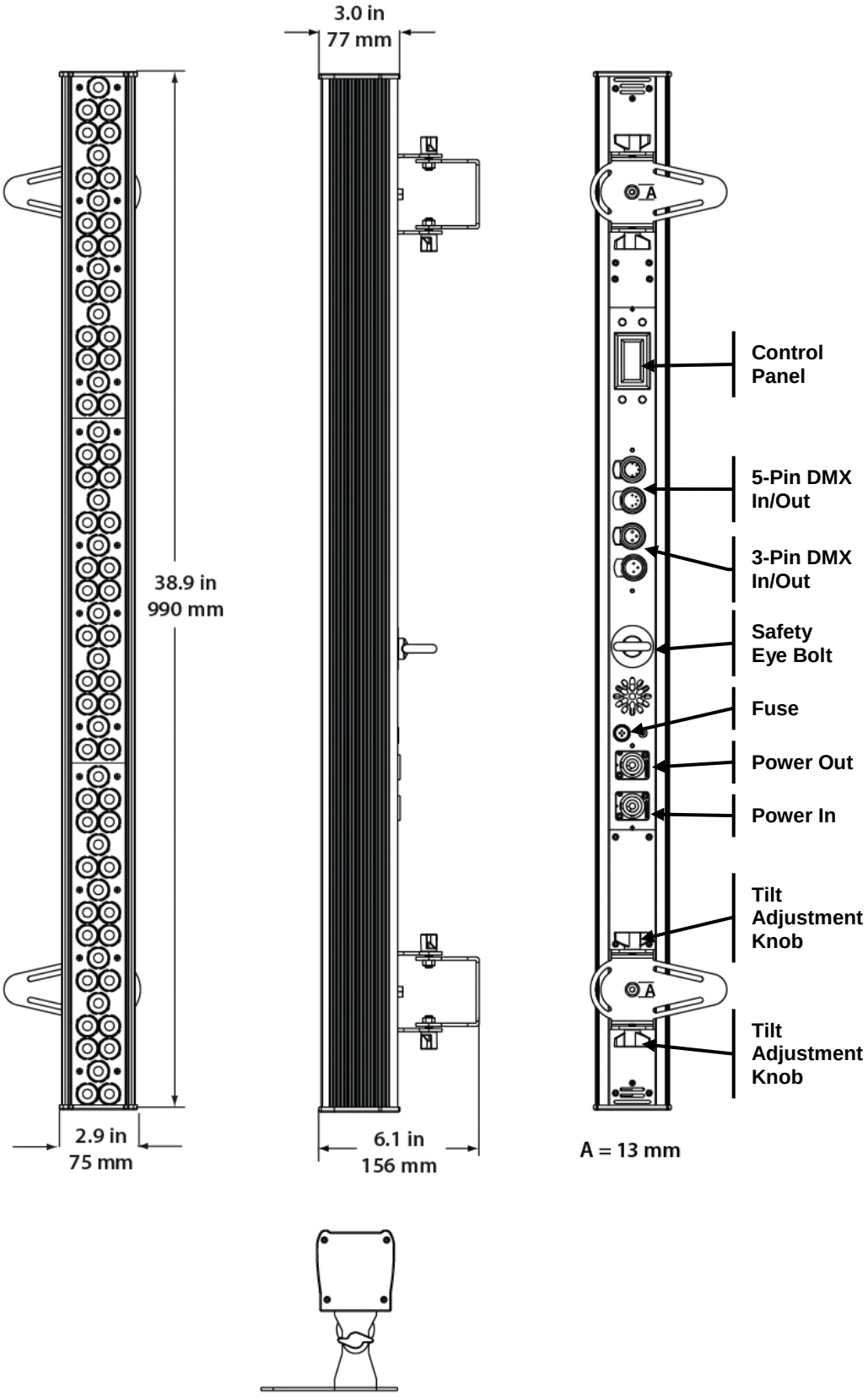
ARC2	DMX Channel	Function
	1	Red
	2	Green
	3	Blue
	4	White
	5	Amber

ARC2 + D	DMX Channel	Function
	1	Master Dimmer
	2	Red
	3	Green
	4	Blue
	5	White
	6	Amber

ARC2 + S	DMX Channel	Function
	1	Master Dimmer
	2	Red
	3	Green
	4	Blue
	5	White
	6	Amber
	7	Strobe

HSV	DMX Channel	Function
	1	Hue
	2	Saturation
	3	Value

Product Overview



3. Setup

AC Power

The COLORado™ Batten 72 Tour has an auto-ranging power supply that can work with an input voltage range of 100~240 VAC, 50/60 Hz.

Make sure that you are connecting this product to the proper voltage, as per the specifications in this guide, the product's user manual or on the product's sticker.

Always connect the COLORado™ Batten 72 Tour to a protected circuit with an appropriate electrical ground to avoid the risk of electrocution or fire.

To determine the power requirements for the COLORado™ Batten 72 Tour see the label affixed to the side of the fixture. Alternatively, you may refer to the corresponding specifications chart in the *Technical Information* chapter of this manual.

The listed current rating indicates the maximum current draw during normal operation. Please refer to the *Sizing the Circuit Breakers* section in the *Appendix* chapter of this manual.

Never connect the COLORado™ Batten 72 Tour to a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel serves only as a 0 to 100% switch.

Power Linking

The COLORado™ Batten 72 Tour supports power linking for up to 13 other COLORado™ Batten 72 Tour fixtures at 120 VAC. Each COLORado™ Batten 72 Tour has Neutrik POWERCON sockets for Power In and Power Out. Although the fixture comes with a power input cord, it comes with no power linking cord.

AC Plug

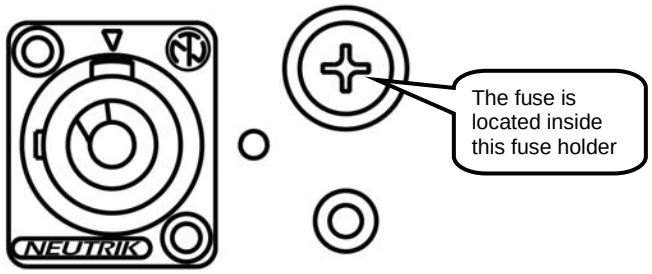
The COLORado™ Batten 72 Tour comes with a power input cord terminated with a NEUTRIK® powerCON A connector on one end an Edison plug on the other end (US market). If the power cord that came with your fixture has no plug or you need to change the Edison plug, use the table below to wire the new plug.

Connection	Wire (US)	Wire (Europe)	Screw Color
AC Live	Black	Brown	Yellow or Brass
AC Neutral	White	Blue	Silver
AC Ground	Green/Yellow	Green/Yellow	Green

Fuse Replacement

1) With a Phillips #2 head screwdriver, unscrew the fuse holder cap from its housing.
2) Remove the blown fuse and replace it with a good fuse of the same type and rating.
3) Screw the fuse holder cap back in its place and reconnect power.

Make sure to disconnect the fixture's power cord before replacing™ the blown fuse, and always replace it with a fuse of the same type and rating.



Lens Replacement

The COLORado™ Batten 72 Tour comes with the 15° lens assembly pre-installed from the factory. However, there is an optional lens kit (**CL20x25x6**) available as an accessory, which will provide a 25º x 6º beam.

Follow the instructions below to to change or replace the LED lenses.

a) Disconnect the fixture from the AC power before opening it.

b) This procedure gives you direct access to the LEDs, which are very fragile. Use maximum care when handling the lenses over the LED assembly.

The numbers in parenthesis in the procedure below correspond to the parts indicated in the *Exploded View* section of the *Technical Information* chapter.

Procedure

1) Remove the four screws that hold either one of the side covers (10).
2) Remove the side cover.
3) Slide the clear cover (1) out of the way to expose the lens holders (2).
4) Remove the eight screws that hold each of the three lens holders.
5) Remove the lens holders from the fixture.
6) Remove the existing lenses from the lens holders.
7) Insert the new lenses in the lens holders, making sure that you have aligned them properly.
8) Reverse steps “1” to “5” to complete the lens replacement procedure.

DMX Linking

If you are using the COLORado™ Batten 72 Tour with a DMX controller, you can link them using a regular DMX serial connection. If using other DMX compatible fixtures with the COLORado™ Batten 72 Tour, it is possible to control them individually with a single DMX controller. It is also possible to run several DMX compatible fixtures synchronized without a DMX controller in a master/slave operating mode.

If you are not familiar with the DMX standard, please refer to the *DMX Primer* and *DMX Connectivity* sections in the *Appendix* chapter of this manual.

The *DMX Channel Summary* section in this chapter contains a brief description of what COLORado™ Batten 72 Tour features have a DMX channel assigned to them. The *Operation* chapter of this manual provides a detailed list of the COLORado™ Batten 72 Tour DMX channel assignments.

DMX Modes

The COLORado™ Batten 72 Tour uses the standard DMX data connection for its DMX modes, TOUR, BLOCK1, BLOCK2, ARC1, ARC + D, ARC2, ARC2 + D, ARC + S, and HSV. Refer to the *Introduction* chapter for a brief description of these modes and the *Operation* Instructions chapter to learn how to configure the COLORado™ Batten 72 Tour to work with these modes. The *DMX Values* section will give you detailed information regarding the above-mentioned DMX modes.

Master/Slave Linking

The Master/Slave mode allows a COLORado™ Batten 72 Tour fixture (the master) running a preconfigured program to control several other COLORado™ Batten 72 Tour fixtures (the slaves) without requiring a DMX controller. In this mode, all the slave fixtures will operate in unison with the master fixture.

When in Master/Slave mode, the COLORado™ Batten 72 Tour units link to each other using the standard DMX connection.

If you are not familiar with the Master/Slave connectivity, please refer to the *DMX Primer* and *DMX Connectivity* sections in the *Appendix* chapter of this manual.

The *Operation* chapter of this manual provides detailed instructions on how to configure the Master and Slave units.

ID Addressing

The COLORado™ Batten 72 Tour uses the ID Addressing feature to increase the number of addressable fixtures in the same DMX universe when in the TOUR personality. Refer to the *Operation* chapter in this manual to learn in detail how to configure the COLORado™ 2 Tour fixtures when using ID Addressing.

If you are not familiar with the various connection methods when using ID Addressing, you may refer to the I*D Addressing* section of the *Appendix* chapter in this manual.

Mounting

Read the safety notes at the beginning of this guide and follow their recommendations before mounting this product.

Orientation

Always mount this fixture in any safe position while making sure that there is adequate room around it for ventilation.

Make sure to mount this fixture away from any flammable material as indicated in the *Safety Notes*.

Rigging

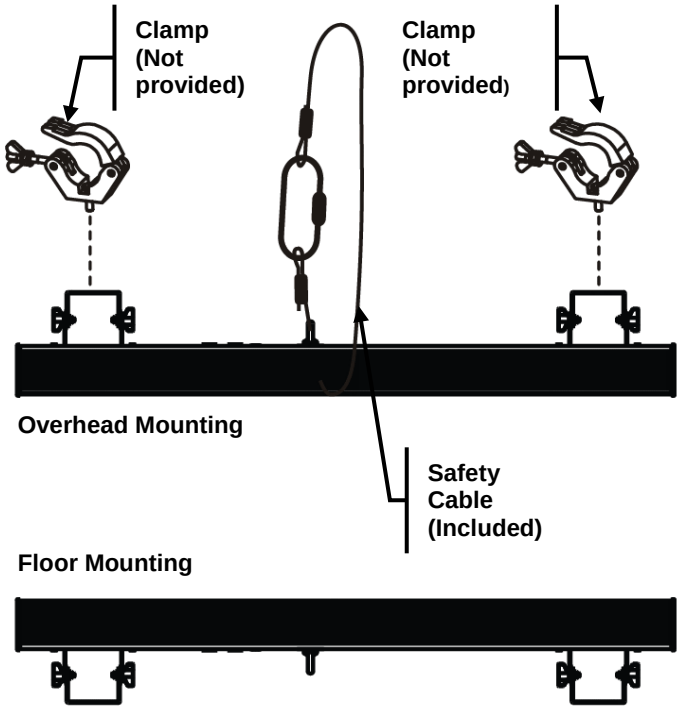
CHAUVET® recommends following the general guidelines below when mounting the COLORado™ Batten 72 Tour.

- When selecting an installation location, consider ease of access to the product for operation, programming adjustments and routine maintenance.
- Always mount this product making sure that there is adequate room around it for ventilation.
- Do not expose this product to extreme temperature changes, rain or humidity.
- If mounting this fixture overhead, make sure that the location where you are mounting it can support its weight. Please see the *Technical Specifications* section of this guide for the weight requirement of this product.

Procedure

The COLORado™ Batten 72 Tour comes with two adjustable feet that double as hanging bracket to which you can attach “C” or “O” clamps. These feet also serve as floor or wall mount supports. You must supply your own “C” or “O” clamps and make sure that they are capable of supporting the weight of this fixture. You will have to use two mounting points per fixture.

Product Mounting Diagram

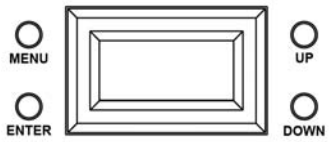


4. Operation

Control Panel Description

Button	Function
<MENU>	Exits from the current menu or function
<ENTER>	Enables the currently displayed menu or sets the currently selected value in to the current function
<UP>	Navigates upwards through the menu list and increases the numeric value when in a function.
<DOWN>	Navigates downwards through the menu list and decreases the numeric value when in a function

CONTROL PANEL



Control Options

You can set the COLORado™ Batten 72 Tour start address in the 001~512 DMX range. This allows for the control of up to 39 fixtures in the 13-channel TOUR personality. In addition, the ID address system allows you to assign up to 66 fixtures for each starting DMX address, thus multiplying the number of fixtures you can control within a single universe. You can access the fixture's ID address system from channel 12 when in the TOUR DMX personality.

When programming live performances as well as cues that need to trigger on demand or on a time line, program no more than 10 fixtures on ID addressing per DMX channel. This is to remain within a one-second execution time.

Programming

Carry out all the programming procedures indicated below from the control panel. Refer to the *Menu Map* on page 14 to learn how the menu options relate to each other.

DMX Personality

This setting allows the user to choose a particular DMX personality.

1) Press **<MENU>** repeatedly until ***PERSON*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select the desired personality (**TOUR**, **BLOCK1**, **BLOCK2**, **ARC1**, **AR1 + D**, **ARC2**, **AR2 + D**, **AR2 + S**, or **HSV**).
3) Press **<ENTER>** to accept.
4) Press **<MENU>** to return to the main level.

DMX Control Without ID Addressing

In this mode, each unit will respond to a unique starting address from the DMX controller. All units with the same starting address will respond at unison.

1) Select the ***TOUR*** personality as shown in *DMX Personality*.
2) Set the running mode:
   a) Press **<MENU>** repeatedly until ***RUN*** shows, and press **<ENTER>** to accept.
   b) Use **<UP>** or **<DOWN>** to select **DMX,** and press **<ENTER>** to accept.
   c) Press **<MENU>** to return to the main level.
3) Set the starting address:
   a) Press **<MENU>** repeatedly until ***ADDRESS*** shows, and press **<ENTER>** to accept.
   b) Use **<UP>** or **<DOWN>** to select the starting address (**001~512**).
   c) Press **<ENTER>** to accept.
   d) Press **<MENU>** to return to the main level.
4) Deactivate ID Addressing in each fixture:
   a) Press **<MENU>** repeatedly until ***SETTINGS*** shows, and press **<ENTER>** to accept.
   b) Use **<UP>** or **<DOWN>** to select ***ID ON/OFF***, and press **<ENTER>** to accept.
   c) Use **<UP>** or **<DOWN>** to select **OFF**, and press **<ENTER>** to accept.
   d) Press **<MENU>** twice to return to the main level.

Make sure to deactivate ID Addressing in each fixture when using the TOUR personality. Otherwise, unintended results may occur if channel 11 is not set to "0".

Programming (Cont.)

DMX Control With ID Addressing

In this mode, the fixtures with the same DMX starting address will respond to the DMX controller based on the fixture's individual ID address setting. If the user selects ID address "0", all the fixtures with the same DMX address will respond in unison. Otherwise, each fixture will follow the control for its particular ID address.

1) Repeat steps **1**, **2** and **3** from *DMX Control Without ID Addressing*.
2) Activate ID Addressing in each fixture:
   a) Press **<MENU>** repeatedly until ***SETTINGS*** shows, and press **<ENTER>** to accept.
   b) Use **<UP>** or **<DOWN>** to select ***ID ON/OFF*** and press **<ENTER>** to accept.
   c) Use **<UP>** or **<DOWN>** to select **ON**, and press **<ENTER>** to accept.
   d) Press **<MENU>** twice to return to the main level.

Static Color

The Static Color mode allows for permanent RGBWA color mixing without a DMX controller.

1) Press **<MENU>** repeatedly until ***STATIC*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select the desired color (***RED***, ***GREEN***, ***BLUE***, ***WHITE*** or ***AMBER***).
3) Press **<ENTER>** to accept.
4) Use **<UP>** or **<DOWN>** to select the desired color value (**0**~**255**).
5) Press **<ENTER>** to accept.
6) Repeat for the other colors.
7) Use **<UP>** or **<DOWN>** to select ***STROBE***, and press **<ENTER>** to accept.
8) Use **<UP>** or **<DOWN>** to select the desired frequency (**0**~**20**).
9) Press **<MENU>** twice to return to the main level.

Auto Programs

Auto programs allow for dynamic RGBWA color mixing without a DMX controller.

1) Press **<MENU>** repeatedly until ***AUTO*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select the desired auto program (**AUTO 01**~**10** or **CUSTOM 01**~**10**).
3) Press **<ENTER>** to accept.

You cannot edit any of the auto programs (AUTO 01~10). However you can edit custom programs CUSTOM 01~10 (see *Edit Customs*).

Edit Customs

This setting allows the programming of up to 30 scenes for each of the 10 customizable programs, including colors and effects.

1) Press **<MENU>** repeatedly until ***EDIT*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select the desired auto program (***CUSTOM 01~10***).
3) Press **<ENTER>** to accept.
4) Use **<UP>** or **<DOWN>** to select the desired scene (***SCENE 01~30***).
5) Press **<ENTER>** to accept.
6) Use **<UP>** or **<DOWN>** to select the desired color or effect (***RED***, ***GREEN***, ***BLUE***, ***WHITE***, ***AMBER***, ***STROBE***, ***TIME*** or ***FADE***) and press **<ENTER>** to accept.
7) Use **<UP>** or **<DOWN>** to adjust the color or effect (**000~255** for colors and timers, or **00~20** for Strobe) and press **<ENTER>** to accept.
8) Repeat for the other colors or effects.
9) Press **<MENU>** to return to the **SCENE** level (step "4").
10) Repeat for the other scenes.
11) Press **<MENU>** to return to the main level once done.

Programming (Cont.)

Master/Slave

The Master/Slave mode allows a group of COLORado™ Batten 72 Tour fixtures (the slaves) to execute simultaneously the same program, whether auto or custom, that another COLORado™ Batten 72 Tour fixture (the master) is executing, and without a DMX controller.

1) Set the Master Unit:
   a) Set the running mode to **DMX** as explained in "*DMX Control Without ID Addressing*"
   b) Select an Auto program as explained in "*Auto Programs*".
2) Set the slave units:
   a) Press **<MENU>** repeatedly until ***RUN*** shows, and press **<ENTER>** to accept.
   b) Use **<UP>** or **<DOWN>** to select **SLAVE**, and press **<ENTER>** to accept.
   c) Press **<MENU>** to return to the main level.

a) The fixture that runs an auto program automatically becomes the Master.

b) Do not connect a DMX controller to the master or slave fixtures.

Color Settings

The ***COLOR*** setting determines how the COLORado™ Batten 72 Tour generates the white color based on various RGB settings.

1) Press **<MENU>** repeatedly until ***SETTINGS*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select ***COLOR***, and press **<ENTER>** to accept.
3) Use **<UP>** or **<DOWN>** to select **OFF**, **RGB TO W** or **UC**.
4) Press **<ENTER>** to accept.
4) Press **<MENU>** twice to exit to the main level.

OFF = When RGB are all set to "255", output is maximum.

RGB TO W = When RGB are all set to "255", output is the defined by the configured White color (see *Whites Setting*).

UC = RGB are all set to the produce the same universal color

Dimmer Curves

This setting determines the output of the COLORado™ Batten 72 Tour based on the position of the Red, Green, Blue, White and Dimmer faders.

1) Press **<MENU>** repeatedly until ***SETTINGS*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select ***DIMMER***, and press **<ENTER>** to accept.
3) Use **<UP>** or **<DOWN>** to select a dimmer curve (**OFF**, **DIM1**, **DIM2**, **DIM3** or **DIM4**).
4) Press **<ENTER>** to accept.

When Dim is set to "OFF", the output is proportional (linear) to the Dimmer and RGBW channel values.

When Dim is set to "DIM1" through "DIM4", the output follows the Dimmer and RGBW channel values based on the corresponding dimmer curve, being DIM1 the fastest and DIM4 the slowest.

Control Panel Lock

This setting allows the user to activate or disable the control panel lock, which keeps non-authorized personnel from changing the fixture's settings.

1) Press **<MENU>** repeatedly until ***KEYLOCK*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select **ON** or **OFF**, and press **<ENTER>** to accept.

When the control panel lock is active, the fixture will prompt the user to enter the password after 30 seconds of control panel inactivity or after turning on the fixture.

After being prompted to enter the password:

1) Press **<UP>**, **<DOWN>**, **<UP>**, **<DOWN>** and **<ENTER>**

Programming (Cont.)

Program Upload

This option allows the user to copy the custom programs of one COLORado™ Batten 72 Tour fixture onto other COLORado™ Batten 72 Tour fixtures by using the Master/Slave method

1) Configure and connect the fixtures in a Master/Slave arrangement, where the master unit has the custom programs you want to transfer onto the slave units.
2) At the master unit, press **<MENU>** repeatedly until ***SETTINGS*** shows, and press **<ENTER>** to accept.
3) Use **<UP>** or **<DOWN>** to select ***UPLOAD*** and press **<ENTER>** to accept.
4) When prompted, enter the master access password as shown in *Control Panel Lock*.
5) When **SEND** shows, press **<ENTER>** to start the upload.
6) Wait for the upload process to finish before disconnecting the fixtures.

During and after the upload, the master and slave units will visually indicate the status of the process, as follows:

Yellow means that the upload is running.

Red means that the upload failed due to an error.

Green means that the upload completed successfully.

Reset

This setting allows the user to reset the COLORado™ Batten 72 Tour fixture to its default values, including the custom programs.

1) Press **<MENU>** repeatedly until ***SETTINGS*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select **RESET**, and press **<ENTER>** to accept.
3) When prompted, enter the master access password as shown in *Control Panel Lock*.
4) Wait for the reset process to finish.

Default Values

Parameter	Default Value	Parameter	Default Value
STATIC	**000**	***DIMMER***	**DIM4**
ADDRESS	**001**	***COLOR***	**OFF**
RUN	**DMX**	***EDIT***	**000**
PERSON	**TOUR**	***FANS***	**AUTO**
ID	**001**	***KEYLOCK***	**OFF**
ID ON/OFF	**ON**		

Whites Setting

This setting allows the user to select and edit the temperature of the white colors used in channel 7 (Macros) when in the TOUR mode. It also allows the user to define the maximum RGB values when ***RGB to White*** is active.

1) Press **<MENU>** repeatedly until ***CALIB*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select a white color (**WHITE 1~11**) or **RGB TO W**.
3) Press **<ENTER>** to accept.
4) Use **<UP>** or **<DOWN>** to select a color (***RED***, ***GREEN***, ***BLUE***, ***WHITE,*** .***AMBER***).
5) Press **<ENTER>** to accept.
6) Use **<UP>** or **<DOWN>** to select a color value (**0~255**).
7) Repeat for the other colors.
8) Press **<MENU>** to exit once done.

When selecting *RGB TO W*, you will only be able to define the values of *RED*, *GREEN* and *BLUE*.

The values of *RED, GREEN* and *BLUE* configured from *CALIB > RGB TO W* will define the color temperature shown when the RGB faders are set to "255" if *COLOR > RGB TO W* is active.

Programming (Cont.)

Fan Setting

1) Press **<MENU>** repeatedly until ***FANS*** shows, and press **<ENTER>** to accept.
2) Use **<UP>** or **<DOWN>** to select a setting (***OFF***, ***LOW***, ***NORMAL***, ***HIGH*** or ***AUTO***).
3) Press **<MENU>** to exit once done.

a) When in AUTO, the fan speed automatically changes so the fixture's temperature does not exceed the limit.
b) When in the other settings, the fan speed follow the predefine values.
c) The internal controller will override any manual setting if the internal temperature rises above a certain level.

TOUR Notes

These notes intent to clarify the way the TOUR DMX personality works.

Master Dimmer

- Channel 1 controls the intensity of the currently projected color.
- When the slider is at the highest position (**255**) the intensity of the output is at its maximum

Red, Green, Blue White and Amber Color Selection

- Channels, 2, 3, 4, 5 and 6 control the intensity ratio of each of the Red, Green, Blue, White and LEDs
- When the slider is at the highest position (255) the intensity of each color is at its maximum if ***SETTINGS > COLOR*** is **OFF**.
- You can combine channels, 2, 3, 4,5 and 6 to create over one trillion colors

Color Macros

- Channel 7 selects the required Color Macro
- Channel 7 has priority over channels 2, 3, 4 and 5
- Channel 1 controls the intensity of the Color Macro

Strobe

- Channel 8 controls the strobe of channels 2~6

ID Address Selection

- Channel 12 selects the target ID address
- Each independent DMX address may have up to 66 independent ID addresses
- An ID address of **0** will activate all ID address locations

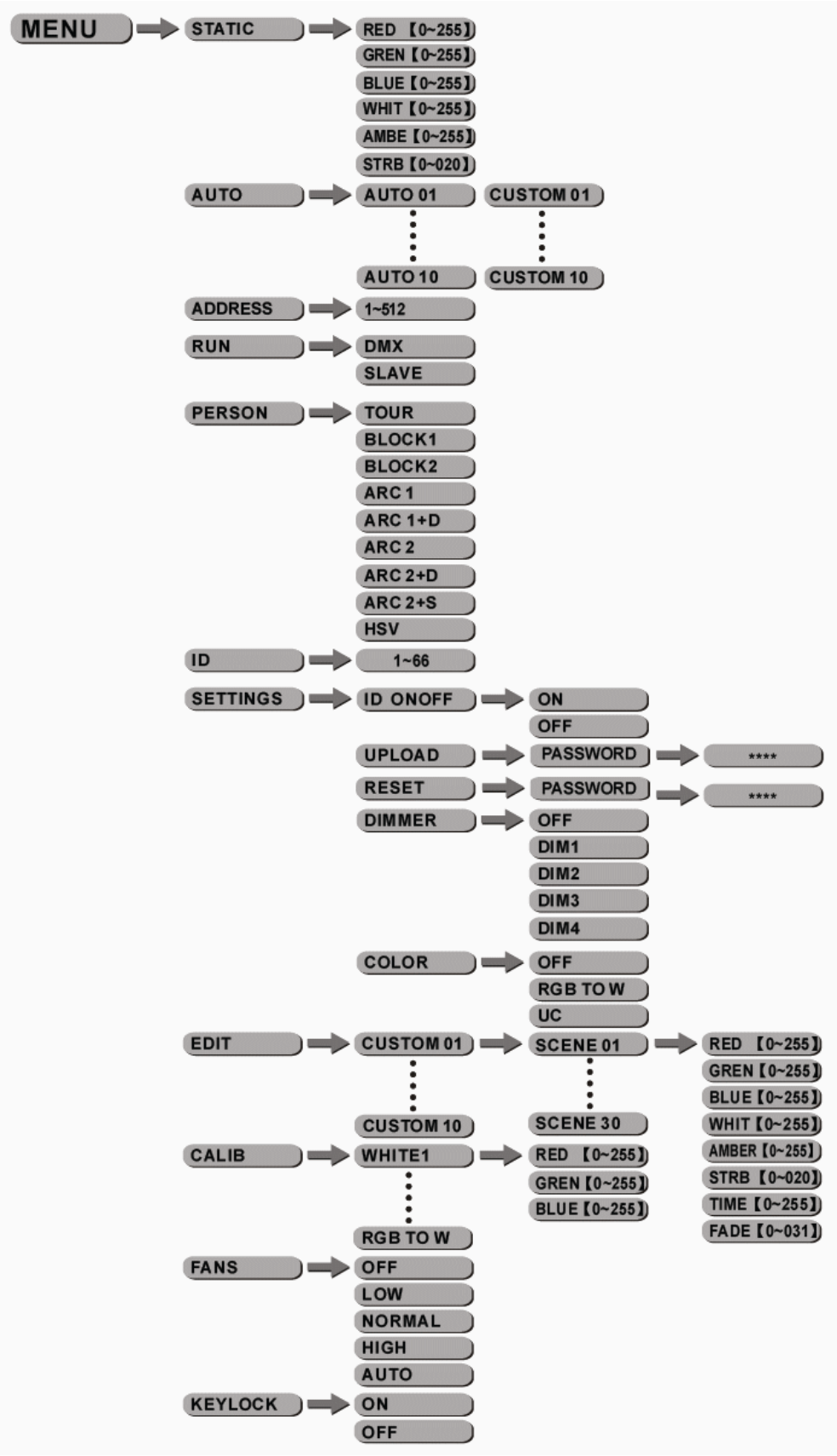
Auto

- Channel 9 selects the preset Auto programs **AUTO 01~10** or the custom Auto programs **CUSTOM 01~10**
- When activating the custom Auto programs **CUSTOM 01~10**, it is possible to control the Step Time and Fade Time using channels 2 and 3 respectively
- Channel 9 has priority over channels 2, 3, 4, 5, 6, 7 and 8.

Dimmer Speed

- Channel 10 is for selecting the dimmer mode and speed. When ***DIMMER*** is set to **OFF,** RGBW and Master Dimmer are linear. Otherwise, DIM1 is the fastest dimmer curve, while DIM4 is the slowest.

COLORado™ Batten 72 Tour Menu Map



DMX Values

TOUR

Channel	Function	Value	Percent/Setting
1	**Dimmer**	000 ó 255	0~100%
2	**Red**	000 ó 255	0~100% (or Step Time if Custom 01~10 in Ch. 9 is active)
3	**Green**	000 ó 255	0~100% (or Fade Time if Custom 01~10 in Ch. 9 is active)
4	**Blue**	000 ó 255	0~100%
5	**White**	000 ó 255	0~100%
6	**Amber**	000 ó 255	0~100%
7	**Color Macro + White Balance**	000 ó 010	No function
		011 ó 030	R: 100% / G: Up / B: 0%
		031 ó 050	R: Down / G: 100% / B: 0%
		051 ó 070	R: 0% / G: 100% / B: Up
		071 ó 090	R: 0% / G: Down / B: 100%
		091 ó 110	R: Up / G: 0% / B: 100%
		111 ó 130	R: 100% / G: 0% / B: Down
		131 ó 150	R: 100% / G: Up / B: Up
		151 ó 170	R: Down / G: Down / B: 100%
		171 ó 200	R: 100% / G: 100% / B: 100% / W: 100%
		201 ó 205	White 1: 3200 K
		206 ó 210	White 2: 3400 K
		211 ó 215	White 3: 4200 K
		216 ó 220	White 4: 4900 K
		221 ó 225	White 5: 5600 K
		226 ó 230	White 6: 5900 K
		231 ó 235	White 7: 6500 K
		236 ó 240	White 8: 7200 K
		241 ó 245	White 9: 8000 K
		246 ó 250	White 10: 8500 K
		251 ó 255	White 11: 10,000 K
8	**Strobe**	000 ó 009	No function
		010 ó 255	1~20 Hz
9	**Auto + Custom Programs + Fan Control**	000 ó 010	No function
		011 ó 020	Fans Off (Stay 3 s)
		021 ó 030	Fans Low (Stay 3 s)
		031 ó 040	Fans Normal (Stay 3 s)
		041 ó 050	Fans High (Stay 3 s)
		051 ó 060	Fans Auto (Stay 3 s)
		061 ó 070	Auto 1
		071 ó 080	Auto 2
		081 ó 090	Auto 3
		091 ó 100	Auto 4
		101 ó 110	Auto 5
		111 ó 120	Auto 6
		121 ó 130	Auto 7
		131 ó 140	Auto 8
		141 ó 150	Auto 9
		151 ó 160	Auto 10
		161 ó 170	Custom 1
		171 ó 180	Custom 2
		181 ó 190	Custom 3
		191 ó 200	Custom 4
		201 ó 210	Custom 5
		211 ó 220	Custom 6
		221 ó 230	Custom 7
		231 ó 240	Custom 8
		241 ó 250	Custom 9
		251 ó 255	Custom 10
10	**Auto Speed**	000 ó 255	0~100%
11	**Dimmer Speed**	000 ó 009	Dimmer speed as per Control Panel
		010 ó 029	Linear dimmer
		030 ó 069	Non-linear dimmer 1 (fastest)
		070 ó 129	Non-linear dimmer 2
		130 ó 189	Non-linear dimmer 3
		190 ó 255	Non-linear dimmer 4 (slowest)

TOUR (Cont.)

Channel	Function	Value	Setting	Value	Setting	Value	Setting
12	ID Address	000 ó 009	All IDs	212	ID 23	235	ID 46
		010 ó 019	ID 1	213	ID 24	236	ID 47
		020 ó 029	ID 2	214	ID 25	237	ID 48
		030 ó 039	ID 3	215	ID 26	238	ID 49
		040 ó 049	ID 4	216	ID 27	239	ID 50
		050 ó 059	ID 5	217	ID 28	240	ID 51
		060 ó 069	ID 6	218	ID 29	241	ID 52
		070 ó 079	ID 7	219	ID 30	242	ID 53
		080 ó 089	ID 8	220	ID 31	243	ID 54
		090 ó 099	ID 9	221	ID 32	244	ID 55
		100 ó 109	ID 10	222	ID 33	245	ID 56
		110 ó 119	ID 11	223	ID 34	246	ID 57
		120 ó 129	ID 12	224	ID 35	247	ID 58
		130 ó 139	ID 13	225	ID 36	248	ID 59
		140 ó 149	ID 14	226	ID 37	249	ID 60
		150 ó 159	ID 15	227	ID 38	250	ID 61
		160 ó 169	ID 16	228	ID 39	251	ID 62
		170 ó 179	ID 17	229	ID 40	252	ID 63
		180 ó 189	ID 18	230	ID 41	253	ID 64
		190 ó 199	ID 19	231	ID 42	254	ID 65
		200 ó 209	ID 20	232	ID 43	255	ID 66
		210	ID 21	233	ID 44		
		211	ID 22	234	ID 45		

Channel	Function	Value	Percent/Setting
13	Block Selection	000 ó 004	Blocks 1, 2 & 3
		005 ó 034	Block 1
		035 ó 064	Block 2
		065 ó 094	Block 3
		095 ó 124	Blocks 1 & 2
		125 ó 154	Blocks 2 & 3
		155 ó 184	Blocks 1 & 3
		185 ó 214	Blocks 1, 2 & 3
		215 ó 255	No Function

BLOCK1

Channel	Function	Value	Percent/Setting
1	Block 1 - Red	000 ó 255	0~100%
2	Block 1 - Green	000 ó 255	0~100%
3	Block 1 - Blue	000 ó 255	0~100%
4	Block 2 - Red	000 ó 255	0~100%
5	Block 2 - Green	000 ó 255	0~100%
6	Block 2 - Blue	000 ó 255	0~100%
7	Block 3 - Red	000 ó 255	0~100%
8	Block 3 - Green	000 ó 255	0~100%
9	Block 3 - Blue	000 ó 255	0~100%

BLOCK1

Channel	Function	Value	Percent/Setting
1	Block 1 - Red	000 ó 255	0~100%
2	Block 1 - Green	000 ó 255	0~100%
3	Block 1 - Blue	000 ó 255	0~100%
4	Block 1 – White	000 ó 255	0~100%
5	Block 1 - Amber	000 ó 255	0~100%
6	Block 2 - Red	000 ó 255	0~100%
7	Block 2 - Green	000 ó 255	0~100%
8	Block 2 - Blue	000 ó 255	0~100%
9	Block 2 – White	000 ó 255	0~100%
10	Block 2 - Amber	000 ó 255	0~100%
11	Block 3 - Red	000 ó 255	0~100%
12	Block 3 - Green	000 ó 255	0~100%
13	Block 3 - Blue	000 ó 255	0~100%
14	Block 3 - White	000 ó 255	0~100%
15	Block 3 - Amber	000 ó 255	0~100%

DMX Mode or Personality

ARC1

Channel	Function	Value	Percent/Setting
1	Red	000 ó 255	0~100%
2	Green	000 ó 255	0~100%
3	Blue	000 ó 255	0~100%

ARC1 + D

Channel	Function	Value	Percent/Setting
1	Master Dimmer	000 ó 255	0~100%
2	Red	000 ó 255	0~100%
3	Green	000 ó 255	0~100%
4	Blue	000 ó 255	0~100%

ARC2

Channel	Function	Value	Percent/Setting
1	Red	000 ó 255	0~100%
2	Green	000 ó 255	0~100%
3	Blue	000 ó 255	0~100%
4	White	000 ó 255	0~100%

ARC2 + D

Channel	Function	Value	Percent/Setting
1	Master Dimmer	000 ó 255	0~100%
2	Red	000 ó 255	0~100%
3	Green	000 ó 255	0~100%
4	Blue	000 ó 255	0~100%
5	White	000 ó 255	0~100%

ARC2 + S

Channel	Function	Value	Percent/Setting
1	Master Dimmer	000 ó 255	0~100%
2	Red	000 ó 255	0~100%
3	Green	000 ó 255	0~100%
4	Blue	000 ó 255	0~100%
5	White	000 ó 255	0~100%
6	Strobe	000 ó 010 011 ó 255	No function 0~20 Hz

HSV

Channel	Function	Value	Percent/Setting
1	Hue	000 ó 255	0~100%
2	Saturation	000 ó 255	0~100%
3	Value	000 ó 255	0~100%

In HSV mode, *Hue* refers to the visible light, such as red, yellow, and cyan, etc. *Saturation* is the dominance of hue in the color; when saturation is at 100%, the color is at its purest. *Value* is the color's brightness; when value is at 100%, the color is at its brightest.

5. Technical Information

General Maintenance

To maintain optimum performance and minimize wear, the user should clean the fixtures frequently. Usage and environment are contributing factors in determining the cleaning frequency. As a rule, the user should clean the fixtures at least twice a month. Dust build up reduces light output performance and can cause overheating. This can lead to reduced light source life and increased mechanical wear.

For fixtures containing external optical lenses, the user should clean them periodically to optimize light output. The cleaning frequency depends on the environment in which the fixture operates. Damp, smoky or particularly dirty surrounding can cause greater accumulation of dirt on the unit's optics. Even in the cleanest type of surroundings, the user should clean the external optics at least once every 30 days. CHAUVET® recommends cleaning the fixture's external optics with a soft cloth using normal glass cleaning fluid.

To clean a fixture, follow the below recommendations:

- Unplug the fixture from power.
- Wait until the fixture is cold.
- Use a vacuum (or dry compressed air) and a soft brush to remove dust collected on the external vents and reachable internal components.
- Clean all external optics and glass surfaces with a mild solution of glass cleaner or isopropyl alcohol, and a soft, lint free cotton cloth or a lens cleaning tissue.
- Apply the solution directly to the cloth or tissue and drag any dirt and grime to the outside of the lens.
- Gently polish the external glass surfaces until they are free of haze and lint.
- When cleaning movable mirrors, to avoid scratching or damaging their surface, minimize the contact with the mirror surface to a minimum.

Always dry the external optics and glass surfaces carefully after cleaning them.

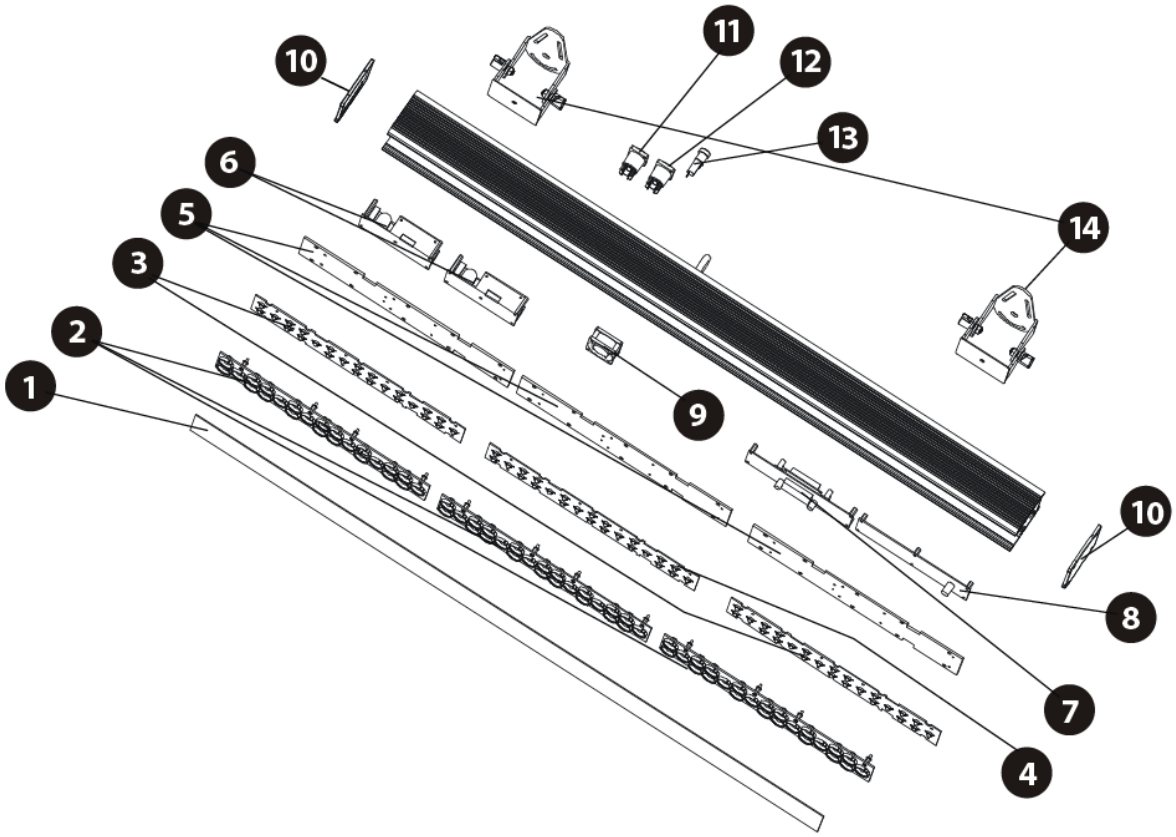
Never spin a fan using compressed air.

COLORado™ Batten 72 Tour Troubleshooting Guide

Symptom	Cause(s)	Action(s)
General low light intensity	Dirty lens assembly	Clean the fixture regularly
	Misaligned lens assembly	Install lens assembly properly
A single LED (R, G, B, W or A) does not illuminate	Faulty LED	Replace the LED board
	Faulty LED board	Replace the LED board
A group of LEDs (R, G, B, W or A) does not illuminate	Faulty LED	Replace the LED board
	Faulty LED board	Replace the LED board
	Faulty LED driver	Replace the LED Driver board
None of the LEDs in a module are illuminating	Faulty LED board	Replace the LED board
	Faulty LED Driver board	Replace the LED Driver board
	Faulty Display/Main board	Replace the Display/Main board
Breaker/Fuse keeps blowing	Excessive circuit load	Check total load placed on the electrical circuit
	Short circuit along the power wires	Check for a short in the electrical wiring
Fixture does not power up	No power	Check for power on power outlet
	Loose or damaged power cord	Check power cord
	Blown fuse	Replace fuse
	Faulty internal power supply	Replace internal power supply
Fixture does not respond to DMX	Wrong DMX addressing	Check Control Panel and unit addressing
	Damaged DMX cables	Check DMX cables
	Wrong polarity on the controller	Check polarity switch settings on the controller
	Loose DMX cables	Check cable connections
	Faulty DMX interface	Replace the Display/Main board
	Faulty Display/Main board	Replace the Display/Main board
DMX signal problems	Non DMX cables	Use only DMX compatible cables
	Bouncing signals	Install terminator as suggested
	Long cable / low level signal	Install an optically coupled DMX splitter right after the fixture with the strong signal
	Too many fixtures	Install an optically coupled DMX splitter after unit #32 or before
	Interference from AC wires	Keep DMX cables separated from power cables or fluorescent/black lights

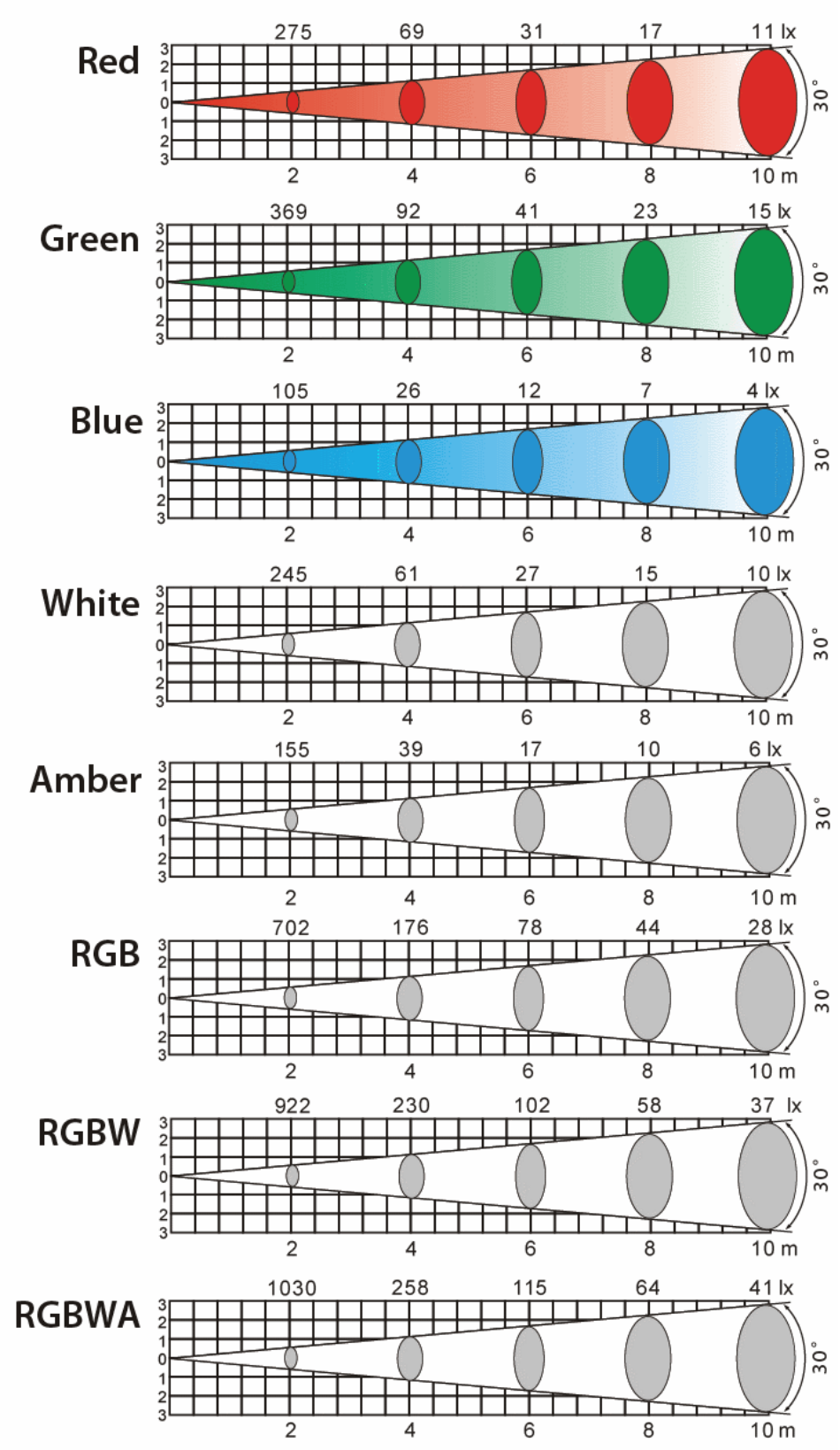
If you still experience technical problems after trying the above solutions, contact CHAUVET® Technical Support.

Exploded View



Item	Description	Part Code
1	Clear front plate	P300-CB72TCP
2	Complete lens set	P115-CB72T
3	LED board A	P222-CB72TA
4	LED board B	P222-CB72TB
5	Heat sink board	P222-CB72THS
6	Power supply	P142-CB72T
7	Display board	P173-CB72T
8	LED driver board	P172-CB72T
9	Fan	P131-24V40X20
10	Side cover	P300-CB72TS
11	Power output socket (white)	P136-NAC3FCB
12	Power input socket (blue)	P136-NAC3MPA
13	Fuse holder	P144-CB72T
14	Support bracket	P125-CB72T

Photometric Data



Returns Procedure

The user must send the merchandise prepaid, in the original box, and with its original packing and accessories. CHAUVET® will not issue call tags.

Call CHAUVET® and request a Return Merchandise Authorization Number (RMA #) before shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the cause for the return.

The user must clearly label the package with a Return Merchandise Authorization Number (RMA #). CHAUVET® will refuse any product returned without an RMA #.

DO NOT write the RMA # directly on the box. Instead, write it on a properly affixed label.

Once you are given an RMA #, please include the following information on a piece of paper inside the box:

- Your name
- Your address
- Your phone number
- The RMA #
- A brief description of the symptoms

Be sure to pack the fixture properly. Any shipping damage resulting from inadequate packaging will be the customer's responsibility. As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

CHAUVET® reserves the right to use its own discretion to repair or replace returned product(s).

Claims

The shipper is responsible for any damage incurred during shipping. Therefore, if the merchandize appears damaged due to shipping, the customer's must submit the damage report and any related claims with the carrier, not CHAUVET®. The customer must submit the report upon reception of the damaged merchandise. Failure to do so in a timely manner may invalidate the customer's claim with the carrier.

For other issues such as missing components or parts, damage not related to shipping, or concealed damage, the customer must made claims to CHAUVET® within seven (7) days of receiving the merchandise.

Contact Us

World Wide

General Information

CHAUVET®
3000 North 29th Court
Hollywood, FL 33020
Voice: (954) 929-1115
Fax: (954).929-5560
Toll free: (800) 762-1084

Technical Support

Voice: (954) 929-1115 (Press **4**)
Fax: (954) 929-5560 (Attention: Service)

World Wide Web

www.chauvetlighting.com

It's Green Thinking

Technical Specifications

Weight & Dimensions
Length.....38.9 in (989 mm)
Width.....3.0 in (77 mm)
Height .....6.1 in (156 mm)
Weight..... 9.8 lbs (4.4 kg)

Power
Auto-ranging ..... 100~240 VAC, 50/60 Hz
Power Consumption @ 120 V .....72 W (1.067 A)
Power Consumption @ 230 V .....71 W (0.568 A)
Inrush Current.....0.4 A @ 120 V, 0.8 A@ 230 V
Power Linking .....13 units max @ 120 V
Power Connectors.....NEUTRIK® powerCON connectors

Light Source
Type.....1 W, 350 mA 50,000 hrs LEDs
Configuration.....72 LEDs (18 Red, 18 Green, 18 Blue, 9 White and 9 Amber)

Photometrics
Installed optics: 30º
Beam angle:..... 40.1º
Field angle: 54.8º
Illuminance:.....1,300 lux @ 2 m

Thermal
Maximum ambient temperature.....104° F (40° C)

Control & Programming
Data input ..... Locking 3-pin or 5-pin XLR male socket
Data output ..... Locking 3-pin or 5-pin XLR female socket
Data pin configuration ..... Pin 1 shield, pin 2 (-), pin 3 (+)
Protocols.....USITT DMX512-A
DMX Channels.....3, 4, 5, 6, 7, 9, 13 or 15

Ordering Information
COLORado™ Batten 72 Tour COLORADOBATTEN72TOUR

Warranty Information
Warranty .....2-year limited warranty

6. Appendix

DMX Primer

The DMX protocol (USITT DMX512-A) is a networking protocol that enables a universal DMX controller device to control the features of multiple DMX compatible fixtures, whether par cans, wash lights, moving heads, followspots, foggers, proprietary fixture controllers, etc.

As any other networking protocol, the USITT DMX512-A describes the physical medium, the signals and the functions they control.

The Physical Medium

The DMX controller connects to it associated DMX compatible fixtures using a DMX connection. This connection consists of a series of jumps between the DMX controller and the various DMX compatible fixtures, also known as a daisy chain connection. In this type of connection, the DATA OUT of one fixture or the DMX controller connects to the DATA IN of the next fixture, and so on.

Each DMX fixture links to the previous and next DMX fixture or controller using a DMX cable. This type of cable consists of a section of shielded, two-conductor twisted pair cable with one 3-pin XLR male connector on one end and a 3-pin XLR female connector on the other end. The XLR connectors pin-out is as follows: pin 1 is the *Common* (shield), pin 2 is *Signal Negative* (S-) and pin 3 is *Signal Positive* (S+).

The Signals

The DMX signal stream is unidirectional, from the DMX controller to the DMX compatible fixtures. These signals conform to the EIA-485 standard.

The stream of DMX signals consists of 512 individual, sequential channels that form a frame. The DMX controller constantly sends frames of DMX signals to the DMX connection, even if not all of the 512 channels are in use. Because of this constant transmission method, there can be only one DMX controller in a DMX connection. Otherwise, the DMX signals sent by one controller would interfere with the signals sent by the other controller(s).

The Functions

Each DMX channel can have any unitary value in the 000~255 range. Each DMX compatible fixture uses as many consecutive DMX channels as features the user can control. The sequential numbers assigned to each DMX channel (1~512) are also known as DMX addresses.

The function each DMX channel has and the results of assigning a value to each depend on each controlled fixture. Some fixtures only use a single DMX channel, while others may require 15 or more DMX channels to control all their functions.

DMX Configuration

The DMX fixture configuration consists in determining how many channels each fixture will need as well as assigning the corresponding DMX channels to each fixture in order to size correctly the DMX controller.

Personalities

Most DMX fixtures use multiple personalities, each of them requiring a different number of channels, depending on the number of features it enables. The number of DMX channels used by a fixture may vary from only one (usually the general dimmer control) to 15 or more, as mentioned above.

When the job does not require using all the fixture's capabilities, the user can select a more basic personality (less channels), thus allowing the DMX controller to accommodate more DMX fixtures.

Starting Address

For the DMX controller to control each DMX fixture, the user must first configure each fixture's personality. This will determine the number of required channels to control the fixture. Each channel will have a DMX address assigned to it. However, since assigning a particular DMX address to each channel is impractical, the user will only need to configure on each fixture the DMX address that corresponds to the fixture's Channel 1. This is the fixture's starting address. The fixture will automatically assign the other channels to the subsequent DMX addresses.

Once this assignment is complete, and based on the number of channels it uses, the fixture will respond to the DMX signals sent to the range of DMX channels that begins with the starting address.

For example, a fixture that uses six DMX channels and whose starting address is 100, will accept DMX data sent by the DMX controller to channels 100, 101, 102, 103, 104, and 105.

DMX Configuration (Cont.)

Assigning Addresses

The user must carefully assign the starting addresses for each individual fixture to avoid DMX channel overlapping. If the DMX channels do overlap, the affected fixtures could operate erratically.

However, the user may decide to configure two or more similar fixtures with the same personality and starting address. In this case, all the fixtures with the same starting address will operate at unison.

DMX Universes

A DMX universe is the set of DMX compatible fixtures connected to the same DMX daisy chain, which are receiving DMX data from the same DMX controller using the same set of 512 DMX channels.

Although in most cases an installation will consist of only one DMX universe, it could be necessary to define two or more universes because of constrains imposed by the distance or the number of features.

Most DMX controllers support only one universe, although some DMX controllers may support two or more universes. Each universe will have its own separated DMX daisy chain. A DMX compatible fixture can only be part of a single DMX universe.

DMX Connectivity

Connecting the DMX fixtures to a DMX controller in small to medium installations is usually a rather simple operation that requires a minimum of tools and some planning (not including the actual fixture rigging and configuration).

However, in large installations it may be necessary to plan carefully the position and cabling of each fixture to avoid unexpected problems.

Fixture Location

The order in which the fixtures connect to the DMX controller is not important and it has no effect on how a controller communicates to each fixture. However, the user should always define a physical location for the fixtures that provides for the easiest and most direct cabling to the controller and other fixtures.

Number of Fixtures

When using a DMX controller, the combined number of channels required by all the fixtures on the serial data link determines the number of fixtures the DMX controller has to support. Conversely, the number of onboard sliders, page buttons and fixture buttons limits the number of discrete DMX channels a DMX controller can support.

To comply with the EIA-485 standard, which is the base for the USITT DMX512-A protocol, do not connect more than 32 fixtures without using a DMX optically-isolated splitter. Doing otherwise may result in deterioration of the digital DMX signal.

DMX Data Cabling

You must use DMX compliant data cables to link two or more DMX compatible fixtures. You may purchase CHAUVET® certified DMX cables directly from a dealer/distributor or construct your own cable.

USITT recommends limiting the total length of the DMX cable (from the first fixture/controller to the last fixture) to 300~455 m (985~1,500 ft).

Making your Own DMX Cable

If you choose to create your own DMX cable, make sure to use data-grade cables that can carry a high frequency signal and are less prone to electromagnetic interference. Use a Belden© 9841 or equivalent cable, which meets the specifications for EIA RS-485 applications.

Do not use standard microphone cables for DMX applications because they cannot transmit DMX data reliably over long distances.

DMX Cable Characteristics

The DMX data cable must have the following characteristics:

Type:	*shielded, 2-conductor twisted pair*
Maximum capacitance between conductors:	*30 pF/ft*
Maximum capacitance between conductor and shield:	*55 pF/ft*
Maximum resistance:	*20 ohms/1000 ft*
Nominal impedance:	*100~140 ohms*

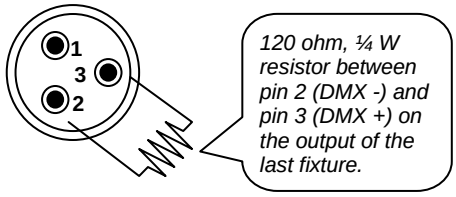
DMX Connectivity (Cont.)

DMX Cable Connectors

Each DMX cable must have a male, 3-pin XLR connector on one end and a female, 3-pin XLR connector on the other end.

DMX Connector Configuration

To avoid signal transmission problems and interference, it is always advisable to connect a DMX signal terminator, as seen below.



Test all DMX cables with an ohmmeter to verify their correct polarity and to make sure that there are no short-circuits between any of the pins, or between any pin and ground.

If the Common wire (shield) touched the chassis ground, a ground loop could form, which may cause the fixture to perform erratically.

3-Pin to 5-Pin Conversion Chart

If you use a DMX controller or fixture with a 5-pin DMX connector, you will need to use a 5-pin to 3-pin adapter. The chart below details a proper cable conversion.

3-Pin to 5-Pin Conversion Chart

Conductor	3-Pin Female (Output)	5-Pin Male (Input)
Ground/Shield	Pin 1	Pin 1
Negative (-) signal	Pin 2	Pin 2
Positive (+) signal	Pin 3	Pin 3
Not Used		Pin 4
Not Used		Pin 5

DMX Connection

Make sure that the fixtures with which you are working can operate in DMX mode, not in a proprietary connection mode. Refer to the fixtures' manual to learn how to enable their respective DMX modes.

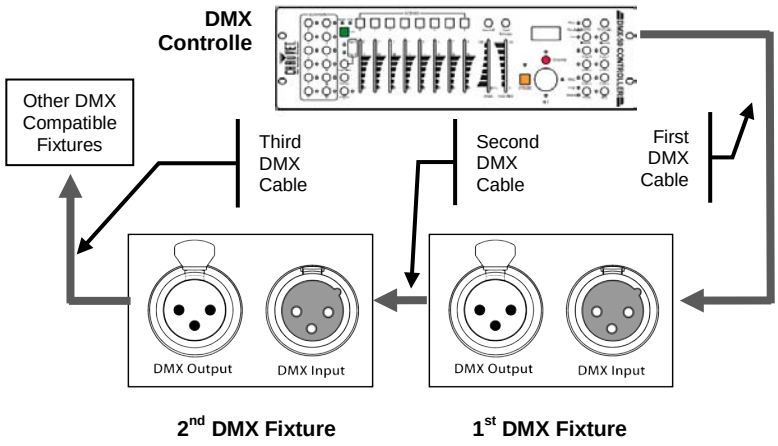
The procedure below illustrates a possible DMX connection method.

1) Connect the 3-pin, male connector of the first DMX cable to the DMX Output connector (3-pin, female) of the DMX controller.
2) Connect the 3-pin, female connector of the first DMX cable coming from the controller to the DMX Input connector (3-pin, male) of the first DMX fixture.
3) Connect the 3-pin, male connector of the second DMX cable to the DMX Output connector (3-pin, female) of the first DMX fixture.
4) Connect the 3-pin, female connector of the second DMX cable coming from the first DMX fixture to the DMX Input connector of the second DMX compatible fixture.
5) Continue linking the other DMX fixtures in the same way.

The figure below is only an example of a possible DMX serial connection.

DMX Connectivity (Cont.)

Generic DMX Data Connection Diagram



Master/Slave Linking

The Master/Slave mode allows one fixture (the master) to run a preconfigured program to control several other fixtures of the same model (the slaves) without requiring a DMX controller. In this mode, all the slave fixtures will operate in unison with the master fixture.

If a fixture supports the Master/Slave mode, it will have some sort of programming function to configure it as master or slave. Those fixtures that only support DMX mode cannot operate in Master/Slave mode.

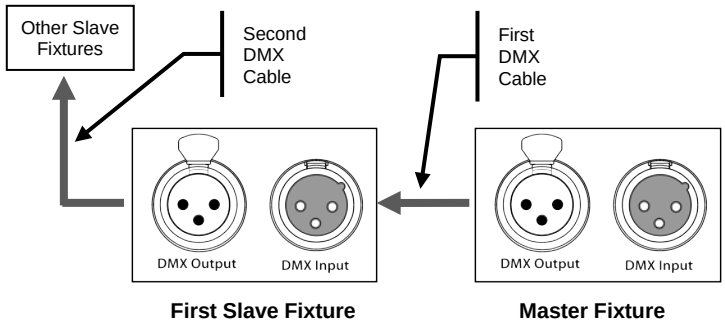
Master/Slave Connection

Make sure the fixtures with which you are working are capable of operating in Master/Slave mode. When working in Master/Slave mode, most fixtures use the DMX data connection as well. The difference in this case is that there is no DMX controller involved. Refer to the fixtures' manual to learn how to configure them to work in Master/Slave mode.

The procedure below illustrates a possible connection method.

1) Connect the 3-pin, male connector of the first DMX cable to the DMX Output connector (3-pin, female) of the master fixture.
2) Connect the 3-pin, female connector of the first DMX cable coming from the master fixture to the DMX Input connector (3-pin, male) of the first slave fixture.
3) Connect the 3-pin, male connector of the second DMX cable to the DMX Output connector (3-pin, female) of the first slave fixture.
4) Connect the 3-pin, female connector of the second DMX cable coming from the first slave fixture to the DMX Input connector (3-pin, male) of the second slave fixture.
5) Continue linking the other slave fixtures in the same way.
6) Follow the steps in fixtures' manual to configure the fixtures as master and slaves.

Generic Master/Slave Connection Diagram



ID Addressing

ID Addressing is a sub-addressing method by which each fixture, apart from its starting address, can also have an "ID" address in the 1~66 range. This allows users to multiply the number of fixtures they can control with a single DMX controller.

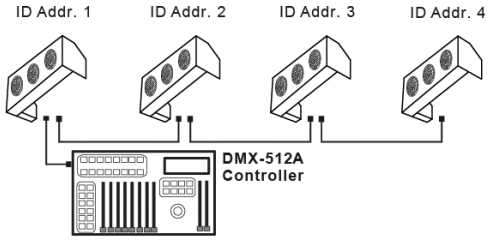
Many fixtures have at least one DMX personality or mode that enables ID addressing. In this case, one of the channels of such DMX mode is in charge of selecting an ID address. When using ID addressing, setting the value of the ID addressing channel to "0" allows for the simultaneous control of all the fixtures with the same starting address, regardless of their particular ID address.

ID addressing is also a tool for creating special lighting effects by having several fixtures sharing the same starting DMX address and ID address, as indicated below.

Single Row Connection

The figure below shows a simple DMX layout that uses four fixtures, all with the same DMX address and a unique ID address for each fixture. This allows the user to control simultaneously the whole group of units at that DMX address by setting the ID Addressing channel to **0**. Similarly, the user can control each fixture at that DMX address independently by first selecting the DMX address and then using the ID Addressing channel to locate the target ID address.

Single Row ID Addressing Diagram

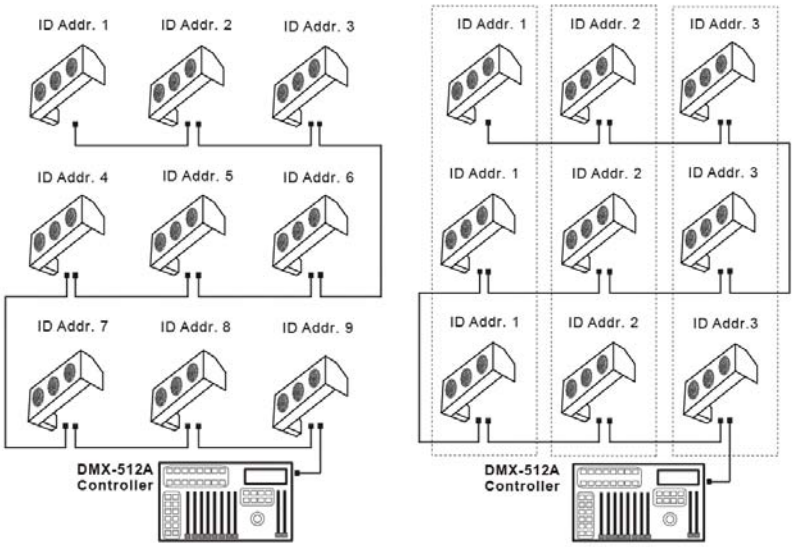


Standard Block Connection

In the Standard Block connection, the fixtures appear in repeated rows of the same length to form a block. For instance, three rows of fixtures with three fixtures per row to form a 3 x 3 block. Each of the fixtures has unique, sequential ascending ID addresses for the controller to control each fixture individually.

Repeated Row Block Connection

In this type of connection, the fixtures appear in repeated rows or columns of the same length to form a block. For instance, there may be three columns of fixtures with three fixtures per column to form a 3 x 3 block. In this case, the fixtures form groups, each with its own sequential ascending ID addresses. This way, the controller will control each group of fixtures individually.



Standard Block Connection **Repeated Block Connection**

Other Effects

For other types of effects, you may group the fixtures in diagonal lines or place them in random positions within a single block.

Sizing the Circuit Breakers

Calculating the total current drawn by the fixtures connected to a particular circuit is not complicated if the installer has the right information at hand and knows how to interpret it.

With the fixture's current draw information, the installer can calculate and select the right circuit breaker size (rating) to which they can connect a group of fixtures.

Using the Spec Sticker

CHAUVET® fixtures come with a sticker that indicates the current they consume in a circuit at the specified voltage. This greatly simplifies calculating the total current drawn.

For instance, if the sticker on the fixture indicates, "0.1 A @ 115 VAC, 60 Hz" and the installer is connecting 12 of them on the same 115 VCA circuit, to determine the total current required by the fixtures it would be enough to do this simple calculation:

0.1 A x 12 = 1.2 A

Using the Watts/Volts Method

Some installers may prefer to determine the current drawn by the fixture by dividing its power consumption, indicated in watts (W), by the voltage (V) on the circuit. As an example, assuming that a certain fixture consumes 240 W and it is connected to a 120 VAC circuit, the current it draws would be:

240 W / 120 V = 2 A

Considering the Power Factor

The above method is accurate only with fixtures whose power factor (PF) is equal, or very close, to "1." Otherwise, the calculated current may be too low with respect to the actual current drawn by the fixture.

In fact, as the PF decreases, the difference between the current calculated using the watts/volts method and the actual current increases.

Therefore, for fixtures with a PF below "0.9," the installer must always consider the fixture's PF when using the watts figure to calculate the current it draws.

For the above example, if the published fixture's PF were "0.7," the resulting drawn current would be as follows:

2 A / 0.7 = 2.8571 A

This is approximately equal to 2.86 A, 2.9 A, or even 3 A, depending on the installer's desire for accuracy. In other words, the actual current ended up being close to 50% higher than originally calculated.

Using the Volt Amps Method

If the fixture's sticker indicates the power consumption in "volt amps" (VA), the calculation of the drawn current is simply the result of dividing the amount in VA by the voltage on the circuit (V). For a fixture with a consumption of 360 VA, the calculation would be as follows:

360 VA / 120 V = 3 A

Note that when the power consumption is in VA, the fixture's PF is never part of the current draw calculation.

Selecting the Circuit Breaker

The National Electric Code (NEC) determines that circuit breakers should handle 80% of their rated capacity for continuous loads (those being on for three or more hours) and 100% for intermittent loads. For safety reasons, CHAUVET® recommends assuming that all loads are continuous.

After calculating the total current the fixtures connected to a particular circuit will draw, the installer must consider the 80% rule indicated above. For a total current of 22 A, the calculation is as follows:

22 A * 1.25 = 27.5 A

The installer should use a 30 A CB because the immediately lower CB rating, 25 A, would not be enough for this load.

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